

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed November 10, 2003. Claims 1-5, 7-17, 24-25, 27-50, 52-62, 64-68, 70-82, 85-88, 90-103, 105, 111-114, 117-129 and 132 were previously pending. Applicants have amended Claim 1 and canceled Claims 64, 65 and 66. Thus, Claims 1-5, 7-17, 24-25, 27-50, 52-62, 67-68, 70-82, 85-88, 90-103, 105, 111-114, 117-129 and 132 are currently pending in this Application.

Applicants respectfully submit that the amendments to Claim 1 is proper, does not constitute new matter, and will not create an additional burden on the Examiner. The amendments are merely for clarification and to make more explicit that which was implicit, inherent or intrinsic from an overall view of the invention as originally submitted. Therefore, it is respectfully requested that such amendments be entered.

REJECTIONS BASED ON 35 U.S.C. § 112

The Examiner rejected Claims 64-66 based on 35 U.S.C. § 112, ¶ 1 and 35 U.S.C. § 112, ¶ 2, and alleged that these claims were indefinite and failed to comply with the enablement requirement. Applicants have cancelled Claims 64-66, without prejudice or disclaimer, and, hence, respectfully request this rejection be withdrawn, and that all other rejections and objections involving Claims 64-66 be withdrawn.

REJECTIONS BASED ON 35 U.S.C. § 103

The Examiner rejected Claims 1-5, 7-17, 24-25, 27-50, 52-62, 67-68, 70-81, 85-88, 90-103, 105, 111-114, 117-129 and 132

based on 35 U.S.C. § 103(a) based on US Patent Nos. 4,420,386 (the '386 Patent) or 4,468,309 (the '309 Patent), both to White, in view of various other references.

Applicant strongly contends that both the '386 Patent and the '309 Patent are directed to high energy ion plating systems involving dc voltages in the range of 3kv to 5kv applied to a substrate or target. This results in high speed collisions between the depositant ions of the plasma and the substrate or target. This may result in damage or changes to the molecular or atomic structure of the surface of the substrate or target. This is often undesirable or unacceptable for many applications and may result in different mechanical properties of the substrate after plating.

The '386 Patent, for example, recites that this "invention relates to high energy level ion plating deposition of plating material, and more particularly to an ion plating method utilizing magnetic fields." Col. 1, lines 6-8. The '386 Patent further indicates that "the high negative potential generated by the negative charge of DC power source 61," and that the direct current negative bias of 3kv to 5kv provides an "attraction through a high voltage drop." See Col 3, lines 27-28, and Col 3, lines 45-50. The '309 Patent provides similar language including that "the present invention" involves a "high energy level ion plating system" and that a "direct current negative bias, for example, 3 to 5 kilovolts from power source 61 may be applied to a fixture 58 which acts as a cathode to attract positive ions towards substrate 60 by attraction through a high voltage drop." See Col 5, lines 20-21, and Col 5, lines 34-37.

Claim 1 and 129, as amended, are the two remaining independent claims in this Application. Both involve low energy plating systems with negative dc voltages applied to a substrate and both recite one of the following:

applying a negative dc signal to the substrate at a voltage amplitude at or between one to 1,500

applying a negative dc signal to the substrate at a voltage amplitude at or between 500 volts and 750 volts;

As such, neither the '386 Patent nor the '309 Patent teach suggest or disclose the inventions defined in independent Claims 1 and 129. Applicants respectfully request that these rejections be withdrawn.

Further, neither the '386 Patent nor the '309 Patent recite, teach, disclose or suggest the various other parameters defined in both independent Claims 1 and 129. These parameters allow the low energy plating to occur where others, such as the inventions taught in the '309 Patent and the '386 Patent all require high energy in order to operate, which results in the undesirable damaging or changing of the surface of the substrates as plating occurs at high ion velocities. As such, Applicants respectfully request full allowance of independent Claims 1 and 129.

Because independent Claims 1 and 129 are the only remaining independent claims, all remaining dependent claims depend, either directly or indirectly, from one of these two independent

claims. As such, all of the presently pending claims are patentably distinct from all cited references, including, without limitation, US Patent No. 5,078,847 to Grosman et al., US Patent Nos. 3,857,682; 4,039,416; 4,054,426; RE 30,401; 4,342,631; 4,420,386; 4,468,309; 4,673,586; 4,667,620; 4,826,365; 5,252,365 to White, US Patent No. 3,329,601 to Mattox, US Patent No. 4,938,859 to Ide et al., US Patent No. 4,282,597 to Yenawine et al., US Patent No. 4,725,345 to Sakamoto et al., US Patent No. 4,990,233 to Hahn, and US Patent No. 4,137,370 to Fujishiro et al. The various differences highlighted in Applicants prior response provides additional claim limitations that are not taught or suggested, either alone or in combination, by any of these references.

Applicants note that the Office Action Mailed November 10, 2003 neither addresses nor provides any reasons why Claim 82 is rejected. Applicants respectfully request allowance of Claim 82 for all of the reasons provided herein.

CONCLUSION

For all the reasons mentioned herein, Applicants respectfully request consideration of all amendments and remarks provided herein. Applicants submit that the Application is in condition for allowance, and Applicants earnestly seek allowance of currently pending claims for the reasons stated herein.

Should the Examiner have any questions, comments, or suggestions in furtherance of the prosecution of this Application, please contact the undersigned by telephone at 214.979.3027.

Applicants, through their attorney, stands ready to conduct a telephone interview with the Examiner to review this Application if the Examiner believes that such an interview would assist in the advancement of this Application.

To the extent that any further fees are required during the pendency of this Application, including petition fees, the Commissioner is hereby authorized to charge payment of any additional fees, including, without limitation, any fees under 37 C.F.R. § 1.16 or 37 C.F.R. § 1.17, to Deposit Account No. 23-3189 of Hunton & Williams (Dallas) and reference Attorney Docket No. 88742.472005. In the event that any additional time is needed for this filing, or any additional time in excess of that requested in a petition for an extension of time, please consider this a petition for an extension of time for any needed extension of time pursuant to 37 C.F.R. § 1.136 or any other section or provision of Title 37. Applicants respectfully request that the Commissioner grant any such petition and authorize the Commissioner to charge the Deposit Account referenced above. Please credit any overpayments to this same Deposit Account.

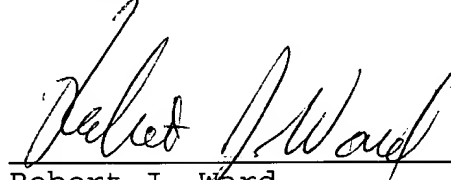
ATTORNEY DOCKET NO. 88742.472005
CUSTOMER NO. 24347

AMENDMENT AND RESPONSE
09/427,775

32

**Please direct all correspondence to the practitioner listed
below at Customer No. 24347.**

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Robert J. Ward", is written over a horizontal line.

Robert J. Ward
Registration No. 38,652

Hunton & Williams LLP
Energy Plaza, 30th Floor
1601 Bryan Street
Dallas, TX 75201-3402
Tel: 214.979.3027
Fax: 214.880.0011
email: rward@hunton.com

ATTORNEY FOR APPLICANTS

May 10, 2004